

WHAT IS CLAIMED IS:

1. An ozone purification system for water comprising:
 - a pump having an inlet for receiving the water, said pump including at least one opening;
 - an expansion tank in fluid communication with a first of said at least one opening of said pump, wherein the water may flow from said pump through said at least one opening to said expansion tank;
 - an ozone generator having an ozone impregnator, said impregnator in fluid communication with said expansion tank and adapted to inject an amount of ozone into the water;
 - a holding tank in fluid communication with said pump; and
 - a valve in communication with said pump and having a first and a second position, said valve directing the water to exit the system when said valve is in said first position, and said valve recycling the water to said expansion tank when said valve is in said second position.
2. The system of claim 1, wherein when said valve is in said second position, the water flows from said expansion tank to said ozone impregnator.
3. The system of claim 1, further comprising an ozone sensor, said ozone sensor detecting a level of ozone in the water.
4. The system of claim 3, wherein said sensor adjusts said amount of ozone injected into water based upon said level of ozone in the water.
5. The system of claim 3, wherein said ozone sensor is a component of said ozone impregnator.
6. The system of claim 1, further comprising a water purification device coupled to said inlet of said pump.

7. The system of claim 6, wherein said water purification device is a reverse osmosis system.

8. The system of claim 6, wherein said water purification device includes an inlet for receiving the water, and wherein the system of claim 6 further comprises a water softener device coupled to said inlet of said water purification device.

9. The system of claim 1, wherein said holding tank includes a vent, said vent in fluid communication with said ozone impregnator.

10. The system of claim 1 further comprising an outlet tube in communication with said pump, the water exiting the system through said outlet tube when said valve is in the first position.

11. The system of claim 10, further comprising a venturi tube defining a passageway and having a plurality of injector tubes extending from said passageway at an angle of between about 45° and about 75° relative to said passageway, each of said plurality of injector tubes defining a channel in communication with said passageway.

12. The system of claim 11, wherein said channel is in communication with said outlet tube.

13. The system of claim 11 wherein said channel is in communication with said ozone generator.

14. The system of claim 11, wherein said passageway has a diameter of between about 1 1/4 inches (3.175 cm) to about 1 1/2 inches (3.81 cm).

15. The system of claim 10, further comprising a pressure sensor in communication with said outlet tube, said pressure sensor sensing a demand at said outlet tube and directing said valve to move from said second position to said first position when said demand is sensed.

16. The system of claim 1 further comprising a dryer in communication with said ozone generator, said dryer receiving oxygen and producing dried oxygen, said dried oxygen flowing to said ozone generator.

17. The system of claim 1, wherein said holding tank is in fluid communication with said pump through a second of said at least one opening.

18. A method of cleansing a wound including the step of irrigating the wound with ozonated water produced by the system of claim 1.

19. A method of processing a food product including the steps of washing the ingredients of the food product with ozonated water produced by the system of claim 13.

20. A method of converting raw water to sterilized water, comprising the steps of:

- (a) treating the raw water to produce clean water;
- (b) pumping the clean water into an expansion tank;
- (c) passing the clean water from the expansion tank to an ozone impregnator;
- (d) impregnating the clean water with ozone using the ozone impregnator to produce ozonated water;
- (e) transferring the ozonated water into a holding tank;
- (f) pumping the ozonated water back to the expansion tank; and
- (g) repeating steps (d)-(f) to produce sterilized water.

21. The method of claim 20 further comprising recycling excess ozone from the holding tank to ozone impregnator.

22. The method of claim 21, wherein steps (d)-(f) are continuously repeated to maintain the ozone level in the sterilized water.

23. The method of claim 20 further comprising, after passing the ozone impregnated water into a holding tank:

determining whether there is a demand for sterilized water from an outside demand source;

pumping the sterilized water to an outlet in communication with the outside demand source.

24. The method of claim 20, wherein said step of treating water includes filtering water through a reverse osmosis system.

25. The method of claim 24, wherein said step of treating water further includes demineralizing water in a softener system.

26. A water purification system comprising:

an impregnator capable of impregnating water with ozone;

a storage tank connected to said impregnator and capable of holding a volume of water;

a circulator coupling said impregnator and said storage tank, said circulator adapted to move water from said storage tank to said impregnator for further impregnation of ozone in the water before re-entry to storage tank.

27. The system of claim 26 further comprising an expansion tank coupled to said circulator.

28. The system of claim 27 further including a sensor adapted to sense the pressure within the system, said sensor communicating with said circulator to move water in response to system pressure.

29. The system of claim 26 further comprising an outlet coupled to said circulator.

30. The system of claim 26 further comprising a cleaning system connected to said circulator and adapted to clean water before it enters the circulator.
31. An apparatus for sterilizing a food or beverage comprising:
 - a generator generating a sterilizing agent;
 - a venturi tube including a wall defining a passageway adapted to permit a flow of the food or beverage;
 - a plurality of injector tubes having a dispensing end, a connecting end, and a channel extending from said dispensing end to said connecting end, said channel in communication with said passageway through said dispensing end, said connecting end coupled to said sterilizing agent generator such that said channel receives said sterilizing agent.
32. The apparatus of claim 31 wherein said generator is an ozone generator and said sterilizing agent is ozone.
33. The apparatus of claim 31 wherein said generator is an ozone purification system and said sterilizing agent is ozonated water.
34.
- 32.* The apparatus of claim 31 further comprising a check valve disposed within said channel at said connecting end.
35.
33. The apparatus of claim 31 wherein said passageway has a diameter of about 1 $\frac{1}{4}$ inch (3.175 cm) to about 1 $\frac{1}{2}$ inch (3.81 cm).
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34. The apparatus of claim 31 wherein each of said plurality of injector tubes are positioned at an angle of between about 45° to about 75° to an axis said passageway.
37.
35. The apparatus of claim 33 wherein said ozone purification system includes

a pump having an inlet for receiving water, said pump including at least one opening;

an expansion tank in fluid communication with a first of said at least one opening of said pump, wherein the water may flow from said pump through said at least one opening to said expansion tank;

an ozone generator having an ozone impregnator, said impregnator in fluid communication with said expansion tank and adapted to inject an amount of ozone into the water;

a holding tank in fluid communication with said pump; and

a valve in communication with said pump and having a first and a second position, said valve directing the water to exit the system when said valve is in said first position, and said valve recycling the water to said expansion tank when said valve is in said second position.